

In the Claims

Please amend the claims in this application as shown on the following sheets.

CLAIMS

1-20. (Cancelled).

21. (Currently amended) A two-dimensional imaging optical instrument for acquiring images of a two-dimensional sample area, comprising:

a two-dimensional spatial detector having detector elements aligned along a first axis and a second axis,

a two-dimensional variable filter having filter characteristics that vary in at least one dimension, and being located in an optical path between the two-dimensional sample area and the two-dimensional spatial detector, and

wherein the instrument defines the optical path as a two-dimensional optical path that simultaneously conveys radiation from different positions in the sample area to different detector elements through portions of the spatial detector having different ones of the filter characteristics; to produce variably filtered images, and

a spectral processor operative to combine spectral information from a plurality of the variably filtered two-dimensional images obtained from the two-dimensional spatial detector as the two-dimensional sample area moves with respect to the instrument.

22. (Previously presented) The apparatus of claim 21 wherein the variable filter is a variable band-pass filter.

23. (Previously presented) The apparatus of claim 21 wherein the variable filter is a continuously variable filter.

24. (Previously presented) The apparatus of claim 21 further including an infrared source and wherein the spatial detector is an infrared detector.

25. (Previously presented) The apparatus of claim 21 further including a near infrared source and wherein the spatial detector is a near infrared detector.

26. (Previously presented) The apparatus of claim 21 further including an ultraviolet source and wherein the spatial detector is an ultraviolet detector.

27. (Previously presented) The apparatus of claim 21 further including a visible light source and wherein the spatial detector is a visible light detector.

28. (Currently amended) The apparatus of claim 21 further including means for moving the sample area relative to the spatial detector.

29. (Previously presented) The apparatus of claim 21 further including logic responsive to the spatial detector for combining a series of images from the spatial detector to obtain full-range spectral images.

30. (Currently amended) The apparatus of claim 21 further including a first stage optic between the sample area and the detector.

31. (Currently amended) The apparatus of claim 21 further including logic responsive to the detector to selectively display spectral information that relates to at least one predetermined substance in the sample area.

32. (Previously presented) The apparatus of claim 21 further including multivariate spectral analysis logic responsive to the detector.

33. (Previously presented) The apparatus of claim 21 wherein the spatial detector is an integrated semiconductor array detector.

34. (Currently amended) An optical method, comprising:
substantially simultaneously filtering a plurality of radiation beam portions from a first set of different positions in a sample area with different filter characteristics,

substantially simultaneously detecting the plurality of radiation beam portions with different parts of a spatial detector after filtering the radiation beam portions in the step of filtering- to detect a first variably filtered image,

moving the sample area,

after the step of moving, again substantially simultaneously filtering a plurality of radiation beam portions from a second set of positions in the sample area with different filter characteristics, wherein the first set of positions is different from the second set of positions,

again substantially simultaneously detecting the plurality of radiation beam portions with different parts of the spatial detector after filtering the radiation beam portions in the step of again filtering to detect a second variably filtered image, and

combining results of the steps of simultaneously detecting and again simultaneously detecting.

35. (Currently amended) The method of claim 34 wherein the steps of detecting acquires data representing a series of variably filtered two-dimensional images, and further including a step of combining portions of the variably filtered images to obtain spectral images.

36. (Previously presented) The method of claim 35 wherein the steps of filtering and detecting are applied to radiation from a pharmaceutical composition and wherein the step of combining derives a spectral image descriptive of the contents of the pharmaceutical composition.

37. (Previously presented) The method of claim 35 wherein the step of combining results in one or more infrared images.

38. (Previously presented) The method of claim 35 wherein the step of combining results in one or more near-infrared images.

39. (Previously presented) The method of claim 34 further including a step of performing a multivariate spectral analysis on results of the steps of detecting.

40. (Currently amended) The method of claim 34 further including a step of selectively displaying spectral information that relates to at least one predetermined substance in the sample area.

41. (Previously presented) The method of claim 34 further including a step of providing a reference substance in the sample area.

42. (New) The apparatus of claim 1 wherein the instrument is located proximate a moving sample flow.

43. (New) The apparatus of claim 1 further including an image acquisition interface that acquires images at a rate that is independent of a rate of movement of the sample area.

44. (New) The apparatus of claim 1 wherein the processor combines the images in real time as they are acquired.

45. (New) The apparatus of claim 1 wherein the instrument is operable independent of any moving parts.

46. (New) The method of claim 34 wherein the steps of detecting take place at a rate that is independent of a rate of movement of the sample area.

47. (New) The method of claim 34 wherein the step of combining operates in real time as the beam portions are detected.

48. (New) The method of claim 1 wherein the method is operable independent of any moving parts.